

CLAIMS

1. A DC motor drive unit for driving a DC motor, adapted to control switching means connected in series to said DC motor, said drive unit comprising:

acceleration setting means for setting a predetermined acceleration period and acceleration stage data in association with said acceleration period at the time of startup of said DC motor; and

PWM pulse generation means for generating PWM pulses having duty ratios in accord with said acceleration stage data or in accord with a prescribed rotational speed of the motor, wherein

said switching means is controlled by

the PWM pulses having duty ratios in accord with said acceleration stage data during said predetermined acceleration period; and

the PWM pulses having the duty ratio in accord with said prescribed rotational speed after said predetermined acceleration period.

2. The DC motor drive unit according to claim 1, wherein said acceleration period includes a sequence of N ($N \geq 1$) acceleration stages each set to have PWM pulses of a predetermined duty ratio over a predetermined acceleration time, said duty ratio increasing in the successive acceleration stages.

3. The DC motor drive unit according to claim 1, further comprising a data judgment means for judging whether an externally supplied speed

instruction data instructs driving of said motor or not, wherein,
when a judgment is made that said speed instruction data
instructs driving of said motor, said switching means is controlled by:
the PWM pulses having duty ratios in accord with said
acceleration stage data during said predetermined acceleration period;
and
the PWM pulses having a duty ratio in accord with the
rotational speed instructed by said speed instruction data after said
acceleration period.

4. The DC motor drive unit according to claim 3, wherein said
acceleration period includes a sequence of N ($N \geq 1$) acceleration stages
each set to have PWM pulses of a predetermined duty ratio over a
predetermined acceleration time, said duty ratio increasing in the
successive acceleration stages.

5. The DC motor drive unit according to claim 4, adapted to:
measure the time that has elapsed from the beginning of said
sequence of acceleration period to determine the current stage in said
acceleration period; and

determine the duty ratio associated with said stage and/or the
duty ratio associated with said speed instruction data in accordance
with a lookup table.

6. The DC motor drive unit according to claim 4 or claim 5, adapted to
execute acceleration of said DC motor in said acceleration period only if
a judgment is made that said speed instruction data instructs driving of

said DC motor and said motor is not in rotation.

7. The DC motor drive unit according to any one of claims 3-5, adapted to stop said DC motor if a judgment is made that said speed instruction data does not instruct driving of said DC motor.